

REMARKS

This application has been reviewed in light of the Office Action dated August 27, 2003. Claims 17-22 are pending in this application. Claims 17, 20 and 22, which are the independent claims, have been amended to define still more clearly what Applicant regards as his invention, in terms that distinguish over the art of record. Favorable reconsideration is requested.

The Office Action rejected Claims 17-22 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 6,130,710 (Yasuda) in view of the admitted prior art. Applicant respectfully traverses this rejection.

Applicant submits that amended independent Claims 17, 20, and 22, together with the remaining dependent claims, are patentably distinct from the proposed combination of the cited prior art for at least the following reasons.

The aspect of the present invention set forth in Claim 17 is a sensor chip formed on a single semiconductor chip. The sensor chip includes an image pickup portion which includes a plurality of photoelectric conversion elements, a scan circuit which reads out a signal from the image pickup portion, and a drive pulse generation circuit which generates a drive pulse for driving said scan circuit. The sensor chip also includes a reference clock signal generation circuit which internally generates a first reference clock signal, a terminal which externally inputs a second reference clock signal from outside the sensor chip, and a switch connected to at least the reference clock signal generation circuit and the terminal, which effects switching between internally driving the image pickup portion and externally driving the image pickup portion.

One of the notable features of Claim 17 is that the sensor chip includes a switch which is connected to a reference clock signal generation circuit and a terminal, both of

which are included in the semiconductor chip, to internally generate and externally input reference clock signals respectively, and switches between internally driving the sensor chip and externally driving the sensor chip. Support in the specification for this feature is shown at least in Figures 3 and 4. (It is to be understood, of course, that the scope of Claim 17 is not limited to the details of these embodiments.)

Yasuda relates to an image pickup control method and image pickup device. The Office Action states (and Applicant's agree) that "Yasuda does not teach a sensor chip formed on a single semiconductor chip, a drive pulse generation circuit which generates a drive pulse for driving said scan circuit, reference clock signals, or a terminal which inputs a clock signal from outside said sensor chip." In Yasuda, Figure 1 shows an image pickup device in which an image pickup element 3 is driven using a timing pulse generated from one of first and second reference signals 18,19, which is selected by a switch circuit 20. However, as the Examiner states in the Office Action, this reference is silent on the sensor chip. Therefore, Yasuda would not teach or suggest a semiconductor chip on which a sensor chip is formed, including means for internally generating a reference clock signal and means for externally inputting a reference clock signal, and switching internally driving the sensor formed on the single semiconductor chip, by using the internally-generated reference clock signal and externally driving that image sensor by using the externally-input reference clock signal.

The Office Action states that the Admitted Prior Art (APA) teaches a sensor chip formed on a single semiconductor chip, a drive pulse generation circuit which generates a drive pulse for driving said scan circuit, reference clock signals, or a terminal which inputs a clock signal from outside said sensor chip. Applicant submits that the admitted prior art is

discussed at page 1, lines 8-10, of the specification, with reference to Figure 1. This section, however, only discusses driving an image sensor portion by using an externally-input reference clock signal that flows through the reference clock's wiring 6. Therefore, Applicant submits that nothing in the APA would teach or suggest internally generating a reference clock signal, and consequently, nothing in the APA would teach or suggest switching between internally driving the image sensor portion and externally driving the image sensor portion, as recited in Claim 17.

Accordingly, Applicant submits that at least for these reasons, Claim 17 is patentable over the cited prior art, when taken separately or in any proper combination.

Independent Claims 20 and 22 include the same feature of a switch connected to at least the reference clock signal generation circuit and the terminal, which effects switching between internally driving the image pickup portion and externally driving the image pickup portion, as discussed above in connection with Claim 17. Accordingly, Claims 20 and 22 are believed to be patentable for at least the same reasons as discussed above in connection with Claim 17.

The other claims in this application depend from one or another of the independent claims discussed above and, therefore, are submitted to be patentable for at least the same reasons. Since each dependent claim is also deemed to define an additional aspect of the invention, individual reconsideration of the patentability of each claim on its own merits is respectfully requested.

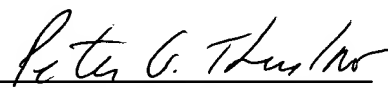
This Amendment After Final Action is believed to place this application in condition for allowance and, therefore, its entry is believed proper under 37 C.F.R. § 1.116. Accordingly, entry of this Amendment After Final Action, as an earnest effort to advance

prosecution and reduce the number of issues, is respectfully requested. Should the Examiner believe that issues remain outstanding, it is respectfully requested that the Examiner contact Applicant's undersigned attorney in an effort to resolve such issues and advance the case to issue.

In view of the foregoing amendments and remarks, Applicant respectfully requests favorable reconsideration and the allowance of the present application.

Applicant's undersigned attorney may be reached in our New York Office by telephone at (212) 218-2100. All correspondence should continue to be directed to our address listed below.

Respectfully submitted,


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